THE ORGANIZATION AND PERFORMANCE OF THE U.S. GROCERY RETAIL TRADE

by

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Diplom, Justus-Liebig-University Giessen, 1986

A REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

DEPARTMENT OF ECONOMICS

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1988

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ACKNOWLEDGMENTS

I would like to express my appertiation to my major professor, Dr. Victor Tremblay for his assistance for this report.

I would also like to thank Dr. Arlo Biere and Dr. Yangming Chang for serving as members of my committee.

As author, I am solely responsible for any shortcoming or errors on this report.

I. INTRODUCTION

1. Purpose and Importance of the Study

Food prices are in many economies sensitive indicators of social and political stability. The important issue to consumers is the price paid at the retail counter. The price level and price instability, however, are thought to originate in upstream markets (agriculture, and processing) which bear the major cost of production. Even though U.S. food consumption accounts for only a small portion of the disposable income, customers are sensitive to food prices.[1] Groceries are bought frequently and the prices of frequently purchased items are familiar to most shoppers. Moreover, food is a necessity and demand is therefore price-inelastic, so that price changes have a big impact on a consumer's budget.

In the early 20th century grocery retailing experienced considerable structural change when horizontally and vertically integrated chainstores developed. Later in the 1950s the ascent of supermarkets altered the prevailing food distribution system significantly. By this time, public attention was drawn towards the evolving food retailing sector, which showed potential for efficiency gains and lower food prices but also meant a decreasing number of grocery stores. The inherent danger of an increasingly oligopolistic market structure became subject of concern and a Federal Trade

[1]According to Kohls and Uhl (1985, p.72) 16 percent of disposable income in 1982 was spend on food.

Commission study in 1966 the first to conduct a study on this issue, evaluated the relationships between market structure and competitive behavior in the food retailing industry. Since then the industry's structure, conduct and performance has been observed and studied by numerous researchers. The purpose of this paper is to evaluate the literature on oligopoly power in the retail food industry, following the structure-conduct-performance model of industrial organization theory.

2. Methodology and Outline

The traditional approach to analyzing a market in the context of industrial organization consists of studying the factors that influence market performance. The underlying paradigm is summarized in Figure 1. The basic conditions of supply and demand determine the structure of a particular market. The elements of market structure, in turn, influence the possible range of market conduct. Actual conduct is responsible for the market's performance in terms of efficiency, economic progress, equity and macroeconomic stability.

The present paper is structured as follows. The historical developments in the U.S. grocery retail trade are summarized before the relevant market is identified. For the grocery retail trade the nature of technology and public policies are the most important basic conditions of supply that determine market structure. On the demand

Figure 1: A model of industrial organization analysis

Basic Conditions

Supply	Demand
Raw materials	Price elasticity
Technology	Substitutes
Unionization	Rate of growth
Product durability	Cyclical and
Value/weight	seasonal character
Business attitudes	Purchase method
Public policies	Marketing type

Market structure

Number of sellers and buyers
Product differentiation
Barriers to entry
Cost structures
Vertical integration
Conglomerateness

Conduct

Pricing behavior
Product strategy and advertising
Research and innovation
Plant investment
Legal tactics

Performance

Production and allocative efficiency
Progress
Full employment
Equity

Source: Scherer, 1980, p.4.

side price elasticities, product substitutability, and consumer behavior are relevant influences on structure and conduct of the industry.

Market structure is characterized by enterprise differentiation, the pendant to product differentiation in manufacturing industries as each retail food outlet differentiates itself by introducing a unique product-price-service mix. Sellers concentration, the traditional indicator for the degree of competition and market power, as well as conglomerateness and vertical integration, which have both implications for conduct and performance in individual markets will be discussed subsequently. The conditions of entry are also part of the market structure, as they have influence on industry concentration and the persistence of monopoly profits.

Pricing behavior, and advertising and promotion strategies are the main issues of firm conduct in grocery retailing. Research and development, investment strategies, and legal tactics are of minor importance and shall be neglected.

The evaluation of market performance is quite complex and shall be discussed with regard to price and profit performance in the efficiency section. The issues of income redistribution will be addressed under the performance criteria of equity. Whether progress and full employment are fostered by the industry structure and conduct will not be considered explicitly.

Finally, conclusions that can be drawn for public policy regarding actual market structure, conduct and performance will be briefly discussed before the most important findings are summarized.

II. BRIEF HISTORY OF THE INDUSTRY

In the early 20th century independent neighborhood stores were the major source for food purchases. They offered a limited assortment of food items and extended services, including packaging, home delivery, and credit. After World War I, however, chainstores increasingly displaced independent retailers. Corporate food chains enjoyed cost advantages from large scale buying, consolidated management, and reduced services (no credits, no home-delivery).[2] Large chains such as the Great Atlantic and Pacific Tea Company (A&P) and Kroger also engaged in vertical integration which created further efficiency gains by replacing small and specialized wholesalers.[3]

The growth of corporate chains induced independent retailers and wholesalers to cooperate. In 1940 wholesaler sponsored voluntary retail chains and retailer-owned cooperative wholesalers (affiliated chains) accounted for 30 percent of all grocery store sales compared to 36 percent held by corporate chains; in 1970 unaffiliated independents almost disappeared, as the share of affiliated chains was 45 percent and the share of corporate chains was 48 percent.[4] According to the most recent Retail Census, firms operating 10 or more stores reached a

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[2]Until 1948 chains were defined as firms operating 4 or more stores, since then 11 or more stores (Marion, Parker and Handy 1986, p.294). The Census of Retail Trade 1982, however, breaks off at 10 or more stores.

[3]Marion, Parker and Handy, 1986, p.294.

[4]Kohls and Uhl, 1985, p.113.

share of total grocery store sales of 62.3 percent in 1982.[5]

In the 1920's the supermarket was invented and promoted in few U.S. cities by independent retailers. It came mainly out of the desire to increase convenience by offering a wider assortment of food items, while reducing costs by introducing self-service. The supermarket concept was fostered by developments after World War II, when increasing income, suburban forms of settlement, improved storage facilities, and greater mobility lead to new shopping attitudes (one-stop shopping by car). At the same time enhanced development of new food products inspired by technological possibilities and also the increased demand for convenience products had feedback effects on the size and kind of grocery stores. In the 1950's almost all retailers converted to the supermarket concept, that became "an American symbol of innovation, affluence, abundance, efficiency, and the good life."[6]

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[5]U.S. Department of Commerce, Census of Retail Trade 1982, Establishment and Firms Size, Table 3. Note, that Census data does not capture the consolidated market shares of affiliated chains.

[6]Kohls and Uhl, 1985, p.114.

III. THE RELEVANT MARKETS IN FOOD RETAILING

The determination of the relevant market is essential for the understanding of the structure-conduct-performance relationships and the conclusions drawn for public policy. The market definition should include all firms that compete with each other by accounting for geographic scope and product substitutability.[7]

1. Geographic Market

There is common agreement that food retailers operate in local geographic markets. Customers do not usually travel far to shop for groceries. However, as figure 2 indicates, the particular trading areas overlap, and the majority of consumers visit more than one store per week.

The most important medium of marketing among grocery stores is printed advertising (local newspapers, flyers, and mailers). The size of newspaper circulation can serve as an approximative measure for the relevant geographic market. Most studies, however, rely on the Standard Metropolitan Statistical Areas (SMSAs) defined by the U.S. Government, although SMSAs are sometimes very broadly defined, since they may include more than one county or several economically separated trading areas. Hearings during the Grand Union merger case revealed

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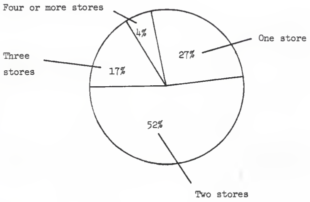
[7] Greer, 1984, p.103.

Figure 2: Number of stores shopped in each week



Source: Progressive Grocer, 54th Annual Report, April 1987, p.44.

that supermarket chains also distinguish their operating districts on SMSA basis for purposes like promotions, price checking of competitors, and expansion plans.[8]

2. Product Market

Grocery stores offer a wide variety of canned and frozen foods, packaged or bulk dry groceries (i.e. tea, coffee, flour) and other processed or fresh foods as well as nonedible grocery items (i.e. soap, detergents, paper products).[9] The assortment of other food stores like bakeries, butchers, and delicatessen shops are much narrower and cannot, even when considered as aggregate, fully replace grocery stores. The same applies to the food service industry (restaurants), which provides mainly food for consumption away from home.

Even among grocery stores there is considerable variation in the product-service mix. Delimitated by the depth and width of assortment, as well as to the overall price level, two major product markets can be distinguished in grocery retailing: Supermarkets and convenience stores. A supermarket is a full line, departmentalized store carrying approximately 10,000 items and serves as a main source for major weekly purchases. In contrast, convenience stores provide fill-in or supplemental purchases and generally do not offer fresh produce or

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[8]Federal Trade Commission, 1981, p.204.

[9]U.S. Department of Commerce, 1985, Census of Retail Trade 1982, Establishment and Firm Size, Appendix A.

meat. They stock about 500-3000 items and derive 60 percent of their sales from tobacco, beer, soft drinks, milk, magazines and newspapers, and candy.[10] Supermarkets do not price check convenience stores as they do not consider them competitors in expansion plans and store location studies.[11]

However, there is some debate about the actual substitutability of convenience stores and supermarkets. The product market definition has far-reaching implications for public policy, as the controversial opinions of the Federal Trade Commission (FTC) and the Administrative Law Judge (ALJ) in the Grand Union merger case with Colonial Stores demonstrate.[12]

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[10] Marion et al.,1979a, p.57.

[11] FTC, 1984, p.1000.

[12] The Administrative Law Judge (ALJ) based his decision (Oct.1981) to challenge Grand Union's market extension merger on the competitive situation in the supermarket submarket, where high barriers to entry were testified. This initial decision was reversed in 1983 by the final order of the Federal Trade Commission (FTC) which considered the cutoff between supermarkets and smaller grocery stores as arbitrary. The FTC took all grocery store sales as the relevant product market and concluded that entry barriers were generally low, since successful entry of single store operators have been reported. For detailed discussion see FTC, 1984, pp.857-865 (barrier to entry, initial decision), pp.995-1004 (product market, initial decision), pp.1038-1047 (relevant markets, FTC opinion), and pp.1062-1067 (entry barriers, FTC opinion).

IV. SURVEY AND EVALUATION OF THE LITERATURE

1. Basic Conditions

Under this term all external factors influencing an industry's structure and conduct are included. Factors that affect the supply side directly and those which work more indirectly through consumer demand will be discussed seperately.

1.1. Supply Side

Among the basic conditions on the supply side of food retailing, technology and public policy are the major issues. Juridical settings regulate the economic life including and the form of ownership and business conduct. Liberal regulations for work and service hours gave way to extended open-hours at seven days a week, allowing a consumer oriented distribution system.

The antitrust laws and the vigor of their enforcement played an important role in the pattern of the industry's horizontal and conglomerate structure. Between 1949 and 1964 mergers contributed significantly to national concentration, as the twenty largest grocery retailing firms acquired control over 70 percent of all capital in the industry.[13] In the following decade (1965-1974) the merger activity of the top twenty grocery chains was significantly reduced by actions of

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[13] Marion et al., 1979a, p.19.

the Federal Trade Commission (FTC), who desired to preserve more possibilities of growth for smaller chains and wholesalers.[14]

In the mid-1970s, when the FTC's consent orders with leading chains expired, several substantial horizontal and market extension mergers occurred and remained unchallenged with few exceptions. For example, in 1976 A&P acquired 62 stores of National Tea in Chicago; more recently Kroger, the second largest retailer, acquired Dillon Co. in 1983, and American Co. became the third largest grocery retailer by merging with Jewel Co. in 1984.[15]

Technology is another force shaping the food retailing system. High mobility of consumers and adequate domestic storage facilities favor shopping centers and large supermarkets which allow one-stop shopping. The increasing number of items, which reflect growing demand for convenience goods and for variety at higher income levels, requires large stores with complex storage and display facilities. Large stores are feasible since modern techniques for handling and storage are available. Labor and capital saving methods require a larger sales volume, so that economies of scale can be achieved by larger supermarkets. For example, the introduction of Universal Product Code (UPC) laser scanners is a recent technical innovation that allows more efficient storage and turnover control.[16] This technique may have an important impact on future market structure, since it enables large scale stores and chainstores to gain the store-level pricing and

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[14]Marion et al., 1979a, pp.19-22.

[15]Marion, Parker and Handy, 1986, p.339-340.

[16]Hamm and Grinnell, 1983, p.1069.

merchandising flexibility that has traditionally been the independents' principal strength.[17]

1.2. Demand Side

Aggregate food demand is very inelastic, as there are physical limits to eating capacity, and there are no substitutes for food. Haidacher (1983, p.33) estimated that for the consumption of food at home the price elasticity was -.2073 and the income elasticity was 0.3648. Individual product elasticities may be higher, according to their substitutability, although estimates vary considerably depending on the models and data chosen.[18] Huang (1985, p.20) estimated the following price elasticities for the observation period 1953-1983:

Beef and veal	-.62	Rice	-.15
Pork	-.73	Sugar	-.05
Oranges	-.99	Apples	-.20
Grapes	-1.38	Carrots	-.04
Tomatoes	-.56	Cabbage	-.04
Canned peas	-.69		

Because the low demand elasticities for food are low, population growth is the predominant factor affecting demand for food. Income growth further shifts demand towards convenience goods and supplemental services (i.e. delicatessen departments) and gave, coupled with consumers demand for variety in food consumption, scope for increasing

[17]Grinnell, 1981, p.29.

[18]Huang (1985, p.14) estimates for butter a price elasticity of -.1670 and an income elasticity of .0227, whereas Blaylock and Smallwood (1985, p.13) find an income elasticity of 0.350 for butter.

enterprise differentiation.

Consumers' shopping behavior, their criteria for store choices and responses to retailer efforts in attracting customers, is an important element of demand that influences retail firms behavior. Many customers develop store loyalty. As much as 77 percent of customers have shopped at their present store for more than two years.[19] The main reason for switching stores was the fact that the shopper moved. Further, on average 72 percent of the food dollar is spent in the primary store and even price conscious shoppers made 66 percent of their food purchases in their primary store.[20]

This rather static behavior and the persistence of price spreads between stores lead some researchers to the assumption that price information of consumers is not sufficient. Devine and Marion (1979, p.229) claim:

> "When price information is poor and perceived store differences are slight, consumers are expected to rely heavily on nonprice factors in selecting a store. Increased price information is expected to reverse this phenomenon ..."

Devine and Marion (1979, pp.234-235) confirmed their hypothesis of consumer behavior, by observing substantial shifts in patronage in Ottawa-Hull (Canada) after publishing price reports comparing individual product prices and market basket costs across stores. In contrast, Boynton et al. (1983) found only minor influences of price reports on consumers' store selection in a similar study conducted in

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[19]Progressive Grocer, April 1987, p.44.

[20]Progressive Grocer, April 1987, p.44.

four U.S. city pairs.[21] Consumers surveyed by Boynton et al. indicated that the price reports were considered more as general market information than as a personal shopping aid. Furthermore, customers perceptions about store price levels have been relatively accurate.[22] Lesser and Hall (1983, p.96), who used a different methodology and covered only seven items in their price reports (compared to 65 by Devine and Marion and 100 by Boynton et al.), also found no relationship between the availability of price reports and prices paid by consumers.

All those studies draw heavily on price as the determinant for selecting a grocery store. Assuming rational decisions, however, consumers will not minimize their expenses at the food store, but seek to maximize their utility, taking into account all of the costs and benefits of shopping. The important issues on the cost side include the money cost of traveling, and opportunity cost of time (needed to travel, search for a parking space, and in-store shopping). Therefore, store location may be an important determinant of store patronage. On the benefit side, specialty items, extended hours, cleanliness, package price marking, couponing, and store games may influence store choice as well.[23]

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[21] Chosen were cities having 190,000-340,000 inhabitants. As test cities served Springfield, Missouri; Erie, Pennsylvania; Des Moines, Iowa; and South Bend, Indiana. They were matched with comparable control cities in the same states (Joseph, MO; Altoona,PA; Quad Cities,IA; and Terre Haute,IN). Boynton, Blanke and Uhl, 1983, p.21.

[22] Boynton et al., 1983, p.26.

[23] Progressive Grocer, Oct.1983, p.44.

2. Structure of the U.S. Grocery Retailing Industry

The structure of a market includes many aspects which are interrelated. The focus of industrial organization lies often on concentration and barriers to entry as both are major determinants for oligopolistic conduct in terms of exploitation of market power. Enterprise differentiation, vertical and conglomerate organization complement the above indicators and will be discussed seperatly.

2.1. Enterprise Differentiation

Grocery stores differentiate themselves by providing a particular product-service mix. Enterprise differentiation is possible since consumer preferences differ with regard to depth and width of assortment, speed of check-out, general shopping environment, and store games.[24] Differentiated stores can expect a more inelastic demand which may provide them some discretion in pricing decisions. Currently a variety of store formats compete for customers. In figure 3 the various store formats are classified according to their width of assortment, and price and service level.

Conventional supermarkets cover a selling area of 20-30,000 square feet, and handle about 12,000 items. Superstores have a larger selling area, emphasize specialty departments, and carry a wider range of general merchandise. If nonfood items are a major part of the entire

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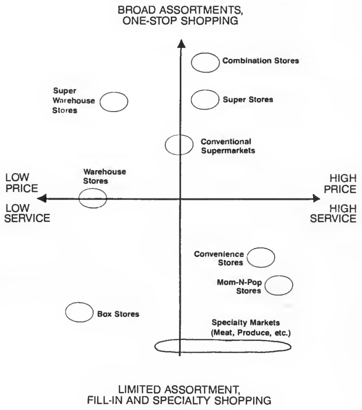
[24]Ratchford and Brown, 1985, p.293.

Figure 3: Retail Food Store Formats



Source: Marion, Parker and Handy, 1986, p.304.

merchandise, the store is called combination store. Generally, warehouse stores have all departments found in conventional supermarkets, but carry a reduced number of items in each department, and offer much fewer services.[25] All store formats above the horizontal axis in figure 3 can be considered as supermarkets, as they are full-line stores in contrast to box and convenience stores which are also self-service, but carry a limited assortment.

2.2. Number and Size of Food Retailing Firms

The concentration of sellers in a market reflects primarily the size of the market relative to the extent of economies of scale and scope present in the industry, although barriers to entry and government intervention may also play a role. The degree of market concentration serves as an indicator of possible monopoly power, and the form and intensity of competition within an industry.[26]

In order to measure the number of sellers in a market and their relative importance, several measures are available. The four firm concentration ratio (CR-4) is the most popular measure of concentration.[27] A weakness of CR-4 is that it does not reflect the market share distribution among the four largest firms and ignores the

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[25] Marion, Parker and Handy, 1986, pp.300-301.

[26] Bain, 1968, p.113.

[27] The CR-4 relates the aggregated sales volume of the four largest firms to the total market sales volume. This is equivalent to the consolidated market shares of the four leading firms.

size of all other firms. In this respect the Herfindahl-Hirschman Index (HHI) has an obvious advantage over CR-4 as it captures the effect of each firms market share.[28] In any case, the HHI and the CR-4 are highly correlated. In connection with a measure of dispersion the CR-4 explains most of the HHI variation for the concentration of grocery firms.[29]

The relevant markets for grocery retailing have been already identified above as inherently local with the SMSA as approximate geographic market entity. Although it is preferable to distinguish the product market of supermarkets, the concentration ratios which include all grocery store sales are typically calculated. The supermarket concentration ratio (SCR-4) and the overall concentration ratio (CR-4) are highly correlatedand the four dominant firms are in general supermarkets, so only the major difference is the base of the two measures.[30]

Between the census years 1958 and 1977 local grocery store concentration increased significantly. For a sample of 173 SMSAs, the CR-4 was on average 48.7 in 1958 and rose to 56.4 in 1977, whereby the rate of increase accelerated since 1967.[31] Local concentration, however, varies considerably among SMSAs, as table 1 indicates. The bulk of SMSAs (65.8 percent) had in 1972 a CR-4 between 40 and 60; nine

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[28]The HHI sums up the squared market share of each individual firm in the market.

[29]Parker, 1985, p.70.

[30]Parker, 1985, p.59.

[31]Marion, Parker and Handy, 1986, p.307.

Table 1: Grocery Store and Supermarket Concentration for 240 SMSAs

Classified by 1972 Concentration Level, 1972 and 1977

Grocery Store Concentration in 1972 (CR4)	Number of SMSAs	Grocery Store Mean CR4 in 1972	Grocery Store Mean CR4 in 1977	Supermarket Mean SCR4 in 1972	Supermarket Mean SCR4 in 1977
< 30	5	27.86	32.20	38.40	41.42
30 < 40	17	35.07	40.02	48.65	51.51
40 < 50	81	44.90	49.71	61.84	64.87
50 < 60	77	54.69	58.05	72.12	73.30
60 < 70	45	64.72	66.02	83.44	82.52
> 70	15	74.93	76.89	90.40	88.49
Total	240	52.58	56.09	69.55	70.93

Source: Marion, Parker and Handy 1985, p.309

Table 2: Average four Firm Concentration Levels by Population Size

of SMSA, 1977

Population Size in 1000	SMSA Number	Percent	4 Firm Concentration Ratio Simple average	4 Firm Concentration Ratio Std. Dev.
> 1000	36	13.0	54.1	4.7
1000 < 300	81	29.3	52.2	6.3
300 < 150	84	30.3	56.0	6.7
150 <	76	27.4	62.1	8.5
All SMSAs	277	100.0	56.1	12.1

Source: Parker 1985, p.38.

percent (22 SMSAa) had a CR-4 of less than 40, and the remaining 60 SMSAs (25 percent) had a CR-4 of more than 60. The corresponding concentration ratios for supermarket sales show considerably higher levels, 91 percent of all SMSAs had in 1977 a SCR-4 of more than 60. The trend in the change in concentration is positively related to the initial CR-4. Except in very highly concentrated SMSAs where the SCR-4 declined slightly from 1972 to 1977.

The population size of a SMSA and its grocery store concentration are listed in table 2. SMSAs with 300,000 to 1 million inhabitants are the least concentrated. As population and sales volume fall, concentration increases. This indicates the presence of economies of scale, suggesting that fewer firms can attain an efficient size in smaller markets. But also in the 36 largest SMSAs concentration is higher (CR-4 of 54.1). When the two largest SMSAs, New York and Los Angeles which have both very low CR-4s (32.4 and 38.3 respectively), are excluded, the CR-4 of the remaining 34 largest SMSAs rises to 55.2.[32] Here the question arises whether in these markets barriers to entry are higher, since concentration is expected to decrease with increasing market size, ceteris paribus.

With the alternative concentration measure, the HHI, the basic finding of high and increasing concentration on the average of SMSAs is the same. The HHI for supermarket sales rose from 1574 in 1972 to 1682 in 1977, whereby 45 percent of all SMSAs had HHI values above 1800 and only 8 percent of the SMSAs were below 1000.[33] The meaning of those

[32]Parker, 1985, pp.37-38.

[33]Parker, 1985, pp.63-64.

values becomes clear in context of public policy issues. The Department of Justice considers in its Merger Guidelines HHI values between 1000 and 1800 as critical and would challenge mergers which increase the HHI by more than 100 points, unless low entry barriers or other mitigating circumstances can be applied.[34] In terms of firm market share, a merger between two firms with a market share of 7.1 percent each would increase the HHI by approximately 100 points.[35]

2.3. Conglomerateness of Food Chains

The term conglomerate applies to firms engaging in production of unrelated products, thus being present in more than one market.[36] As mentioned before, grocery retailing firms are increasingly organized in the form of chains, thus operating on a multistore basis, what often includes presence in several geographic markets. Some chainstores may be therefore considered as conglomerate firms with respect to different geographic markets.

There is no comprehensive data available about the number of firms operating in more than one geographical market. The national

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[34] Parker, 1985, p.62.

[35] When firm A and B are independent, the HHI weights each of their market shares (MS) as follows: $MS(A)^2 + MS(B)^2$. After merging their market shares are reduced to one: $(MS(A)+MS(B))^2 = MS(A)^2 + 2MS(A)MS(B) + MS(B)^2$, so that the change in HHI is $2MS(A)MS(B)$. A change in HHI of 100 results if each firms market share equals approximately 7.1 percent.

[36] Greer, 1984, pp.127-128.

concentration ratios may serve as a crude approximation of conglomerateness, assuming that overall firm sizes reflect also geographical dispersion. In the census year 1954 few grocery chains could be considered as conglomerate firms. Four chains held a share on total U.S. grocery store sales of 20.9 percent, while the 5th to 20th largest chains only accounted for 9.0 percent (CR-20 of 29.9).[37] Three decades later, more firms have moved towards national significance. In 1982 the national CR-4 was 16.4 percent, thus lower than previously, whereas the 5th to 20th largest chains hold 19.2 percent of national grocery store sales (CR-20 of 35.6).[38]

The growing number of conglomerate firms may have implications for local competition, since such firms have a particular potential to engage in cross-subsidation and anticompetitive policies.[39] Further, subsequent influences on structure, conduct, and performance in upstream markets are likely, since powerful food chains have more bargaining power and may be able to reduce monopolistic overcharges of manufacturers.

2.4. Vertical Integration

Vertical integration is present when different originally independent stages of the production-distribution process are linked in

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[37]Parker, 1985, p.88.

[38]U.S. Department of Commerce, 1985a, Tab.6.

[39]Scherer, 1980, p.335.

one firm. The first step towards vertical integration for supermarket chains is warehousing, that is procurement, storage and distribution functions usually performed by wholesalers.[40] In 1977 321 warehouses were operated by grocery chains. Since integrated warehousing proves efficient only when there are enough stores to be served in a distance of roughly 200 miles, a relatively high sales volume in a given region is prerequisite to attain economies of scope. The 50 largest grocery chains were almost totally integrated as 75 percent of their merchandise was channeled through firm-owned warehouses and roughly 24 percent was delivered directly by manufacturers.[41]

Several supermarket firms also engage in private label merchandising, which includes product definition, label design, and promotion, leavin the processing to independent manufacturers. Private label products usually yield higher gross margins per dollar of sales, but receive more (expensive) shelf spaceas a form of sales promotion. Independent wholesalers also offer private label programs and other related business services to smaller chains and firms, so that the cost advantage to large firms is reduced. In 1980, private label products accounted for 24.4 percent of sales of labeled food products.[42]

Direct integration of food processing in the food retailing firm occurs mostly for regionally produced goods such as fluid milk, bread, fresh and prepared meats, and ice cream. In some instances grocery chains are significant producers in a product class. Whether

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[40]Parker, 1985, p.107.

[41]Parker, 1985, pp.107-108.

[42]Parker, 1985, pp.113-115.

integration into manufacturing provides economies of scope or is more induced by the desire for conglomerate growth is not evident. Parker (1985, p.122) compared the relative profitability of food manufacturing and food retailing and found that there were small gains through economies of scope.

2.5. Barriers to Entry

Entry conditions are important determinants of an industry's conduct and performance. If entry is difficult, monopolistic power may arise among established firms.[43]

Four categories of entry barriers have been discussed in the literature: (1) cost advantages of established firms, (2) high capital raising costs, (3) barriers which are due either to certain other market characteristics or legal considuation (product differentiation, patents and licenses) and (4) barriers erected by the incumbent firms to forestall entry.[44] The importance of those barriers for the U.S. grocery retailing industry shall be reviewed next.

Cost Advantages

Some economies of scale exist at the store level. As a result bigger stores have lower costs as well as enjoying higher consumer

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[43] Bain, 1968, pp.252-253.

[44] Clarkson and Miller 1982, pp.360-389; Greer, 1984, pp.154-159; Bain, 1968, p.255.

preferences, thus having a better basis for success.[45] On the other hand large stores offer more items and more departments, which tends to increase costs. Because large chains tend to be unionized and, thus pay higher wages the barriers to entry for nonunionized firms are lowered.[46]

Some multistore economies exist in retail trade. The major advertising medium (newspapers) is rather expensive in larger population centers, and covers the whole city, so that the spread of advertising expenditures over many stores may yield substantial savings for multistore firms. In medium to large sized SMSAs a simultaneous opening of several stores may therefore be a prerequisite for successful entry.[47]

Benefits of vertical integration also favor the larger established firms, but may be not so substantial when the entrant is already operating a warehouse at a feasible distance. The cost advantage to integrated chains for warehousing and transportation was about 0.6 percent of retail sales in thr 1972-78 period.[48]

Capital Raising

The financial resources required to open a grocery store depend on the size of the store. For a 30,000 square foot supermarket fixed

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[45]Marion, Parker and Handy, 1985, p.312.

[46]Parker, 1985, p.130.

[47]Marion, Parker and Handy, 1986, p.314.

[48]Grinnell, 1982, pp.27-28.

costs may run up to $1 million for stocking and equipment and $3 million liability for the lease of the store.[49] In the case of multi-store entry, this amount reaches dimensions not feasible for independent entrepreneurs (smaller regional chains) which wish to expand into a larger SMSA.

Other Market Characteristics

The availability of attractive store sites may be a serious problem for locally unknown firms. Especially when the entrant has to compete against already established firms for sites in new shopping centers and doesn't offer an appealing new store format, locally reputed firms are preferred or the entrant has to pay a higher rent.[50]

The prevailing enterprise differentiation is another issue that affects the ease of entry. It makes a difference for the entrant if the store format he plans to open is already abundantly present in the market or not.[51] A new store format is likely to have less problems to find a good site, raise the capital, and to reach the necessary sales volume by partly displacing its competitors. Warehouse stores and box stores are recent examples of such new successful store formats, whereas conventional supermarkets face more saturated, well-served market segments in which customers are more difficult to attract.

Strategic Barriers to Entry

This kind of barrier is closely related to industry conduct, to which the following chapter is devoted. Its presence indicates that

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[49]Marion, Parker and Handy, 1986, p.315.

[50]Marion, Parker and Handy, 1986, p.315.

[51]Caves and Porter, 1977, p.254.

there are feedback effects from conduct to market structure which may occur in oligopolized markets. The reactions towards entrants will depend on the niche the entrant intends to cover and the threat it is posing for the incumbent firms.[52]

The strategy of preempting the market can take two forms in retailing. Excess capacity may be built ahead of demand, for example in the anticipation of growth in new suburbs. Likewise the market can be preemptied in terms of store formats.[53] For the latter Grinnell (1985, p.317) reports transformations of obsolete chain stores in no-frill box or warehouse stores and Marion et al. (1985, p.317) mention store remodeling in the wake to a competitors entry. Those strategies are difficult to detect, and they also embody benefits for consumers.

More aggressive reactions preceding or following an actual entry are easier to recognize and subject to public attention, as they involve a dramatic increase in price and advertising competition. When a dominant firm is a conglomerate or has many stores in a SMSA, it can reduce prices especially in stores close to the entrant's site. The new-comer is then forced to carry very low prices and to endure losses, while the established firm can cross-subsidize to neutralize losses.[54] This strategy is illegal when predatory pricing or attempts to monopolize can be detected.[55] However, there is some evidence that aggressive price-matching and advertising campaigns occur, during which

[52]Caves and Porter, 1977, p.260.

[53]Scherer, 1980. pp.253-260.

[54]Scherer, 1980, p.335.

[55]Clayton Act, Sec.2, and Sherman Act Sec.2.

sometimes capital weak firms have to file for bankruptcy.[56]

Statistical Evidence of Barriers to Entry

Marion et al. (1979, p.76) included in their structure-profit analysis a variable that characterized firms which were relatively new in a SMSA. Those firms were expected to experience lower profits during the first years, a hypothesis that was confirmed by the regression results. The entry variable was negatively related to profits and highly significant, thus suggesting that barriers to entry were present.[57]

3 Firm Conduct

The way in which the market participants interact, and the respective bargaining power they possess heavily influence market performance. In food retailing the services offered by stores are not homogeneous, sellers' concentration is rather high in most markets and barriers to entry cannot be overruled. The supermarket industry can therefore be classified as oligopolistic. In such circumstances firms have market power, their price and output decisions influence the market equilibrium ('price maker').[58] The degree of mutual interdependence may vary between store formats and is also influenced

[56] Cotterill and Mueller, 1980, pp.569-571; Marion, Parker and Handy, 1986, p.317.

[57] Marion et al., 1979, p.82.

[58] Bain, 1968, p.114.

by basic conditions and market structure. For example, firms in a fast growing market may behave differently than in a slow growing one, where one firm can grow only at the expense of his competitors. This implies that many forms and intensities of price and non-price competition are likely to be observed across local markets. In the following, the general pricing and advertising strategies are summarized before the evidence concerning oligopolistic behavior is discussed.

3.1 Pricing Patterns, Advertising and Promotion

The observation that prices for the same items differ among stores is common to every consumer. However, not all prices differ systematically among stores, although some stores appear generally higher priced. The fact that high and low price stores coexist can be explained by the fact that high priced stores offer greater service and therefore do not necessarily have higher profits. Whereas gross margins averaged 24.3 percent for 32 grocery chains in 1986-87,[59] box stores operate on gross margins of 12 to 13 percent.[60]

Supermarkets handle thousands of items so that they have some flexibility in their particular pricing decisions. According to Gold et al. (1982, p.84) the percentage markup on individual items may extend from -5 to 55 percent. There are several reasons for such pricing patterns. Markups can be manipulated according to the price

[59] Mc Laughlin and Hawkes, 1987, p.4.

[60] Handy and Stafford, 1981, p.197.

elasticity of demand and the total value of an item. Some products may serve consumers as indicator of the overall store price level (i.e. milk, meat) and therefore be priced on a lower margin. Prices have also psychological aspects. A price of $.49 seems to indicate a reduction from $.50, therefore odd pricing is wide spread.

Frequent price changes are a common policy. Devine and Marion (1979, p.233) observed that stores changed prices from week to week on 40 to 46 percent of the 65 items price-checked. As in food retailing prices are also a form of promotion, products are alternately featured for their low prices. Special deals and allowances from manufacturers give further scope for variable price merchandising.

Advertising and in-store promotion complement each other and are closely related to the pricing strategy. However, advertising also can emphasize non-price attractions, such as store games, couponing, or other promotional activities.[61]

3.2 The Dynamics of Pricing and Advertising

One important characteristic of oligopolistic behavior is the recognition of the mutual interdependence by the existing firms. As mentioned in connection with the market definition, supermarkets price-check each other, a fact that indicates their mutual awareness. When there is mutual interdependence, one firm is likely to respond to changes in the strategy of a rival. The response may either consist in

[61]Gold et al., 1981, p.90.

matching the competitor's moves by copying his strategy, or pursuing countermoves (store differentiation). Sansolo (1985) reports longer store hours, emphasis on perishables, cleanliness, and friendly service in response to price competition. Firms may establish an equilibrium situation of coexistence as long as no aggressive firm operates in the market, that means as long as their conjectures are not proven to be wrong.[62] The market dynamics are therefore best studied when disturbances occur.

Several reports in business magazines describe market reactions to the entry of price aggressive firms.[63] However, few attempts have been made to measure and quantify the competitive reaction triggered by entering firms.[64] Handy and Stafford (1981) surveyed systematically the Washington, D.C. area as a new box store chain entered the market in 1979. Their observations reveal a strong competitive impact especially on the price levels of the two leading chains, which had a combined market share of more than 60 percent. One leading chain had reduced prices in its outlets close to the box stores already in anticipation of their opening, a move that may be interpreted as an attempt at zone-pricing. Five weeks after the first survey both dominant firms had lowered their overall price level in the Washington area, while the other firms had stable or slow rising prices. In 34 weeks after the box stores arrived, the price structure in the market

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[62]Bresnahan, 1981, pp.942-943.

[63]For example: Sansolo, 1985; Progressive Grocer, Oct.1983; Advertising Age, April 1986.

[64]For example: Cotterill and Mueller, 1980; Handy and Stafford, 1981.

had become much more diverse, and the price differential between the box stores and the average of all firms had dropped from 30 percent to 25.[65] The advertising intensity increased throughout the market, especially previously light advertisers increased their advertising expenses markably. Supermarket's offers to redeem coupons at double face value, and the introduction of consumer games complemented the competitive tactics.[66]

In the context of oligopoly theory these responses demonstrate that the initial equilibrium situation, where the market leaders had similar price levels, was disturbed by the expectation and presence of a new competitor. Comparable conclusions can be drawn from the observations of firms' pricing behavior during experimental public price reporting programs.[67] Those comparative price reports caused confusion among sellers who dropped average prices during the publication period, but returned after the test period to their prereporting conjectures, since prices rebounded subsequently.[68] Boynton et al. (1983, p.22) note that responses across the four test cities were not uniform, and also individual firms' reactions were diverse. However, the authors could not find a significant relation between concentration and price response, or between a dominant firm's market share and price response across the four markets. They

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[65] Handy and Stafford, 1981, pp.198-199.

[66] Handy and Stafford, 1981, p.201.

[67] Devine and Marion, 1979; Boynton, Blanke and Uhl, 1983.

[68] Devine and Marion, 1979 and 1980; Boynton, Blanke and Uhl, 1983; Benson and Faminow, 1985.

attribute the varying reactions to firm specific factors, the competitive history, and the previously reigning market situation, an explanation that may be valid for the short run.[69] Moreover, their sample was not large enough to allow general conclusions for the impact of concentration on firm behavior and market power, an issue that will be closer examined in the following section.

4. Performance

The economic performance of an industry consists of four elements, efficiency, equity, economic progress, and macroeconomic stability. Here the report will focus on efficiency and equity since they are most important.

Efficiency comprises several aspects. One aspect is whether individual firms operate at minimum costs for a given output or waste resources. This is called economic efficiency, which includes necessarily also technical efficiency. If all firms operate at minimum long run average costs and, thus, be in the range of optimal firm sizes, the industry has achieved productive efficiency. Whether the socially desirable amount of output is produced is a matter allocative efficiency. When prices equal marginal costs, aggregated consumer and producer surplus are maximized and the allocation of resources is considered optimal. Effective competition leads to prices that are close to marginal costs, so that no economic profit can be earned.

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[69]Boynton, Blanke and Uhl, 1983, pp.24-25.

Thus, high profits indicate exploitation of market power and allocative inefficiency. Likewise a comparison of prices between similar markets may give information about monopolistic overcharges.

The traditional view in industrial organization theory states that economic profits can be earned in highly concentrated markets due to implicit or explicit collusion in the presence of significant barriers to entry.[70] However, a recent debate has arisen whether this theory and the empirical evidence supporting it is correct. Advocates found a positive and significant relationship between concentration and profits. Opponents, however, found that a firm's own market share and not market concentration is positively correlated with firm profits, when both variables are included in the same regression.[71] This result supports Demsetz's (1973) superiority hypothesis, that high concentration and high profits are the result of the growth in market share of successful (profitable) firms. In an analysis of specification uncertainty and the possible bias by researchers' prior beliefs, Bothwell et al. (1984) found in a sample of manufacturing businesses only clear support of positive correlation to profit for the variables firm growth, advertising and market share, whereas concentration, measures of barriers to entry and risk showed no positive association to profits.

The focus of the controversy is whether large firms earn high profits because they are superior and have lower costs (and the few large superior firms have positive impact on figures of average

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[70]Bain, 1968; Stigler, 1968, Ch.5.

[71]Gale and Branch, 1982, p.90; Smirlock et al., 1984, p.1053.

industry profits), or because they possess market power which allows them to raise prices. In the latter case all firms in the market should make profits unless they are marginal producers that would drop out under competitive conditions.[72] A further source of inefficiency may be hidden in oligopolistic industries when weak competition allows firms to operate on higher cost curves. In such a case of x-inefficiency the firm will not show higher profits although prices charged are above competitive levels.[73]

While the superiority-market power debate appears still unsolved, the evidence in food retailing industry shall be examined in the following section. A further aspect of market performance which shall be considered is the distribution of wealth and the way in which the market promotes equity.

The industry's promotion of progress, the development and adaption of new cost saving technologies can be also viewed as element of its performance. However, there is little research available, so that this issue will not be addressed in this paper. It may be noted that Marion, Parker and Handy (1985, p.326) judged the dynamic efficiency in the food retailing sector to be 'modest', arguing that most innovations originate from equipment suppliers rather than from the industry itself.

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[72] Smirlock et al., 1984, pp.1051-1052.

[73] Greer, 1984, p.425.

4.1. Efficiency

Whereas most market performance studies focus on manufacturing industries, a study of retail trade is valued because many geographic markets exist with various structural settings, which allows for a large sample, and the problem of parameter nonstationarity associated with interindustry studies is less likely to occur in intraindustry comparisons. When grocery stores have similar cost structures and accounting techniques across markets, accounting profits may serve as basis for performance comparisons. However, an evaluation of cross-sectional grocery prices may lead to more valid conclusions about the industry's conduct and performance with respect to the structural settings.[74] Before the available grocery retailing price and profit performance studies are discussed, some characteristics and implications of particular industry subgroups shall be considered.

Supermarkets are not homogeneous with respect to services, prices, and therefore costs. With differing prices across firms (store formats), the dominating store format in a given market may bias the prevailing price level independent of concentration. Store size does not satisfactorily reflect this effect since, for example, box stores and convenience stores are both small but box stores have lower prices; likewise, superstores and warehouse stores have comparable sizes although they have very different price levels. Ideally price levels of the same store format should be analyzed across markets.

Furthermore, firms operating more than one store in a particular

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[74]Scherer, 1980, p.288.

market enjoy some cost advantages in advertising, while regional chains benefit from efficiencies of scope due to integrated warehousing.[75] This implies that operating costs will differ across firms even for stores of the same size and format. However, when markets are selected that do not differ significantly from each other in terms of store format dominance and corporate organization, average price levels and average cost in individual markets would provide a satisfactorily basis for comparative performance analyses.

Three studies of price and profit performance have been conducted for the U.S. grocery retail trade.[76] These studies are based on different models and data sets which are summarized in table 3. Marion et al. (1979) and Cotterill (1984) analyzed firm level data; Marion et al. restricted their structure-price analysis to three grocery chains for which comparable data was available, and Cotterill covered supermarkets in the state of Vermont. In contrast, Lamm (1981) used aggregate market level data, compiled by the Bureau of Labor Statistics.

In the light of the market share-concentration debate, it should be noted that only one study controls firm market share by including relative firm market shares (RFMS) as explanatory variable. Whereas the firm market share (FMS) is determined as the ratio of firm sales to market sales volume, RFMS measures a firm's size relative to the leading firms in the market and is computed as the ratio of FMS to the

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[75]see Chapter IV, Sec. 2.3 and 2.4

[76]Marion et al., 1979a and 1979b; Lamm, 1981; Cotterill, 1984 and 1986.

Table 3: Data and variables used in empirical studies to explain retail prices with measures of market (and firm) structure

	Marion et al. (1979)	Cotterill (1984)	Lamm (1981)
Markets covered	35 SMSAs	35 rural markets in Vermont	18 SMSAs
Year	1974	1980	1974-1977
Dependent variable	Prices of "grocery basket" composed of 94 comparable products (private label and national brands) for three grocery chains (39 observations). Data supplied by firms.	Prices of grocery basket (same as Marion et al., expanded by several items; covers 50 percent of sales in supermarkets). Data supplied by firms, but completed and checked by in-store survey in 32 of the 78 supermarkets.	Prices of food market basket for a family of four as compiled by the Bureau of Labor Statistics (BLS).
Explanatory variables	- Grocery store CR-4. - Relative firm market share (RFMS) in terms of CR-4. - 1972 mean store size (in $ of sales). - Market rivalry (absolute change between CR-4 (1972) and CR-4 (1974)). - Market size (SMSA grocery store sales in 1974). - Wage rate (weighted average of 1974 union wage rates for meat cutters, grocery clerks, and checkers in each SMSA).	- Supermarket concentration: HHI and alternatively other measures (incl. firm market share). - Binary variable for independents (10 or less stores per firm). - Store size (in square feet and square feet squared). - Distance to wholesale distribution centers. - Population growth. - 1980 per capita income.	- Price to retailer (BLS Producer Price Index for finished consumer foods). - Price of labor (hourly wage rates for journeymen clerks). - Market concentration: alternatively CR-4, CR-3, CR-2, CR-1, or market shares of two, three, or four firms individually. - Average store size (# of baskets sold per SMSA divided by the # of stores). - Binary variables for regions (to capture further cost differences).

Source: Marion et al., 1979a, pp.95-101; Cotterill, 1984, pp.7-15; Lamm, 1981, pp.70-71.

four firm concentration ratio (CR-4).[77] Although Smirlock et al. (1984, p.1053) disregard the measure of relative market share in favor of the ordinary market share, Marion et al. (1979a, p.71) argue that in cross-sectional analyses the RFMS is more appropriate, since it measures the firms' relative competitive position (especially its discretion in pricing and its relative cost advantage). Additionally the RFMS has, in contrast to the FMS, the advantage that it is not highly correlated with the CR-4 and multicollinearity in the model can be avoided.[78]

The results of the three studies are very similar in that all of them indicate that a high degree of seller concentration is one cause of price disparity across markets. Each study, however, highlights other aspects as well. The relative firm market share and concentration ratio are the most important variables explaining firms prices in the Marion et al. (1979a) study, both are positive, and statistically significant. In addition, the measure of market rivalry (the change in CR-4) has a strong impact on the explanatory power of the model and has the expected inverse relationship to prices. Similarly prices tend to be significantly lower in growing markets.[79]

Cotterill (1984, p.15) analyses rural markets where the four firm supermarket concentration is on average 96.1 percent.[80] His results

[77]This is equivalent to the ratio of the firm's sales to the sales volume of the four leading firms.

[78]Marion et al., 1979a, p.71.

[79]Marion et al., 1979a, p.102.

[80]The dominant firm has in 11 out of 18 markets a share of more than 50 percent, 11 markets have less than four supermarkets.

point out that the HHI is the best measure of concentration, showing a strong positive effect on firm prices. Alternatively, the one firm concentration ratio estimates the price level almost as well, indicating a dominant role of the market leader. This finding is opposite to Demsetz's (1973) hypothesis that a larger market share indicates superiority, such that firm profits will be higher because of lower costs, not because of higher prices. Likewise the firm's market share proves to influence its price level, such that an increase in its market share by 10 percent would lead to approximately 0.6 percent higher store prices. This may indicate some spacial monopoly power of individual firms. Independent supermarkets had, ceteris paribus, about 2 percent higher prices than chainstores, suggesting that economies of scope (advertising, warehousing) are significant. Prices were also significantly higher in small and large supermarkets than in medium sized stores. This illustrates that increasing economies of scale are offset and reversed by increasing costs of store differentiation. Parameters for transportation cost and demand variables (income level and population growth) had only negligible effects and were not significant.[81]

Whereas in rural markets the leading firm's market share (CR-1) has dominant impact on the overall price level, in urban areas the three firm concentration is the relevant measure of market power according to Lamm's (1981) evaluation. The introduction of the market shares of each four leading firms as individual explanatory variables indicates that an increase in the market share of one of the top three

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[81]Cotterill, 1984, pp.18-22.

firms raises market prices. The impact of the second firm is the largest: 10 percent increase in its market share causes a 0.6 percent increase in food prices,[82] a result that is surprisingly similar to the leading firm's impact on prices in Cotterill's study. The fourth firm in the metropolitan market appears to complicate tacit collusion and leads to more competitive pricing, as its market share has a negative effect on the market price level. The three firm concentration ratio accordingly proves to be a better indicator for the exploitation of market power than alternative concentration ratios, although the joint use of individual firm market shares is significantly superior to concentration ratios. All other variables in this model show the expected sign and are significant.[83]

Lamm (1981, p.75) also searches for critical levels of firm market shares and suggests that in markets in which the three leading firms have more than 24, 13, and 10 percent market share respectively, and the fourth firm less than 7.5 percent, "collusion becomes most 'effective'". This proposition appears to be in contradiction to Geithman et al. (1981, pp.350-352), who find no critical concentration ratio in the supermarket industry, using the data set of Marion et al. (1979) and substituting dummy variables for continuous concentration ratios. Geithman et al. (1981) also examine the influence of alternative concentration ratios of prices. Although prices increase

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[82]This figure is indicated in tab. 2 at Lamm (1981, p.74); the accompanying text, however, refers to the values of the various regressions in a different way than displayed in the table, and suggests a 0.31 percent increase in food prices.

[83]Some of the regional dummy variables are not significant. Lamm, 1981, pp.72-74.

continuously with increasing CR-3, the difference becomes statistically significant when CR-3 ranges from 50-55 percent.[84] In essence, both studies indicate that concentration levels above CR-3 of 45 can be considered critical, in that prices begin to increase with rising concentration, a magnitude that is attained in most grocery retail markets.

Since all of the considered price-structure studies indicate exploitation of market power in high concentrated markets, it can be concluded that in those cases prices are not close to marginal costs and therefore allocative efficiency is not achieved. When grocery firms operate technically and economically efficient, these higher prices should translate directly into higher profits.

For the Vermont supermarkets, Cotterill (1983, pp.23-24) cites the 1980 before tax profit-sales ratio of three chains (2.25, 3.55, and 5.95 percent) compared to the industry average (1.46 percent). One of the chains collected 15.1 percent of its before tax profits in Vermont for 1980, while this state accounted for only 3.7 percent of the chain's total sales.

Whereas Lamm (1981) did not study profits, Marion et al. (1979a, pp.56-94) present a complete structure-profit analysis (based on pretax profits as a percent of sales on SMSA level). Price and profit analysis, however, draw on different samples and are therefore not fully comparable. Nevertheless, Marion et al. compile a table comparing the estimated price increases with corresponding profit

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[84]The range between CR-3 40 and 50 shows also relative high t-values. Geithman et al., 1981, p.352.

increases that were computed for various RFMSs while moving towards higher concentration ratios.[85] Firms with a RFMS of 25 percent were estimated to have in any market 0.7 percent higher prices than those with a RFMS of 10, and their profits were also higher by 0.78 percent. Firms with a RFMS of 55, however, had 3.2 percent higher prices than competitors in similar concentrated markets with a RFMS of 10, but only 2.34 percent higher profits, indicating that 73 percent of the price difference is reflected in higher profits. Similar firms (same RFMS) in higher concentrated markets appear to have much higher costs. For example only 16 percent of the price difference between markets with CR-4 of 40 and CR-4 of 70 show up as profits.[86]

The figures in both studies suggest that costs are higher in more concentrated markets and in markets where one firm has a large market share. This may be partly due to more intensive nonprice competition (advertising, open hours, promotion, store differentiation) and also costly excess capacity (serving as barrier to entry) might reduce actual profits.

As reported by Sansolo (1985) for the Indianapolis market, some stores are able to reduce costs when they are exposed to severe price competition. The degree by which services are reduced by cutting costs is difficult to measure, so that no conclusive answer can be given in the matter of x-inefficiency.

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[85] Marion et al., 1979a, p.131.

[86] Marion et al., 1979a, p.131.

4.2 Equity

As the survey of the previous section indicates, grocery retail firms are able to raise prices above competitive levels in concentrated markets. This means a loss in consumer surplus while grocery store firms earn monopoly rents. Stated differently, income is redistributed from consumers towards supermarket firms in oligopolistic markets. A consequent question is to what extent these rents benefit the factors of production. Since in this distribution process the bargaining power of labor is of crucial importance, firms profits and prices might be related to the degree of unionization. One hypothesis is that unions can extract more benefits for employees when supermarket concentration is high,[87] another is that strong unions are one cause of increasing food prices even in low concentrated retail markets.[88]

There is some empirical support for both hypotheses. Lamm (1982) used basically the same model and data set as in his previously cited study (Lamm 1981), adding a variable that measures union concentration (percentage of total grocery store man-hours worked by union employees in each SMSA) and found a significant positive relation between union membership and retail food prices.[89]

Voos and Mishel (1986) looked at the profit performance of unionized and nonunionized firms on the SMSA level that was based on the model and data set of Marion et al. (1979a). The union impact was

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[87] Voos and Mishel, 1986, p.514.

[88] Lamm, 1982, p.73.

[89] Lamm, 1982, p.76.

treated as exogenous in one case and in interaction with grocery store concentration in another. Their results show a significant negative impact of unionization on firms' profits, and an even stronger negative influence in concentrated retail markets.[90] It can be concluded that unions obviously have the power to force partial redistribution of monopoly rents and may even be the cause of higher food retail prices.

Another issue of income distribution and equity is related to the geographical coverage of supermarkets. Poor coverage may be a problem in some rural areas, but is socially more alarming when it occurs in low-income areas, especially of the inner cities of large metropolitan areas.

Inner-city supermarkets have higher operating expenses and are less profitable than stores located in the suburbs. Their financial performance is poor, mainly due to a lower sales volume, but they have also higher expenses for real estate tax, insurance, as well as increased cash imbalances, and have more problems with bad checks and inventory shrinkage (theft). An older and less efficient store design additionally raises labor costs.[91] These prospects are not very attractive for supermarket chains which are reluctant to cover inner-city poverty areas. When the market is left to smaller independent grocery stores with even higher operating costs and gross margins, the income position of poor households (which spend a large portion of

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[90]According to their estimates unions were able to keep 57 percent of the monopoly rent, a figure that is comparable with estimates for manufacturing industries. Voos and Mishel, 1986, p.516; Karier, 1985.

[91]Marion, 1982, pp.23-24.

their income on food) is worsened.[92]

Although those effects are socially undesirable, supermarkets firms cannot be blamed for not investing in markets with weak demand and high risk. On the other hand, these innercity problems illustrate that the prevailing food retailing system benefits the rich more than the poor.

5. Implications for Public Policy

From the preceding survey it can be concluded, that most local grocery retail markets are oligopolistic. Since multistore operations offer efficiencies of scope in advertising and procurement, the trend towards larger firms will continue. Markets in rural areas and less populated SMSAs will experience relatively higher prices. But very large SMSAs also face high concentration, evidently due to barriers to entry. Evaluations of price and profit performance indicate significant exploitation of market power in highly concentrated markets, so that it appears that the industry's move towards productive efficiency counteracts allocative efficiency.

The possibilities of public policy to enforce more competitive pricing in oligopolized markets are limited, although the antitrust laws provide some tools for intervention. Entry deterring practices (discriminatory pricing) which indicate an attempt to monopolize are illegal under the Clayton Act (Sec.2). Mergers which may substantially

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[92]Marion, 1982, p.22.

lessen competition can be challenged with reference to the Clayton Act (Sec.7). Further, the Federal Trade Commission Act (Sec.5) prohibits unfair methods of competition.[93]

Applying the existing antitrust laws is a delicate task. The underlying economic forces generating concentration (economies of scope) cannot be neutralized by laws, as was attempted in the Von's grocery case in 1966 by the Supreme Court.[94] Further, de novo entry by large food chains into slow growing markets might add to excess capacity, so that market extension mergers may be relatively more desirable when firms try to expand. The readiness to allow even substantial market extension mergers has been exemplified by the Federal Trade Commission's (FTC) final order in the case of Grand Union's acquisition of Colonial Stores Inc. in 1983 which reversed the Administrative Law Judge's initial decision to challenge the merger.[95]

The question remains whether the desire of large conglomerate firms to further expand is really driven by superiority or efficiency, and how the inherent risk of exploitation of market power can be lowered. Some faith in the market dynamics may be appropriate as long as innovative firms are able to penetrate markets and revive sluggish

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[93] Seplaki, 1982, pp.662-671.

[94] Von's acquisition of Shopping Bag Food Stores in the Los Angeles area was challenged. The fact that the number of single store operators has been drastically declining was enough for Justice Black to conclude that horizontal mergers were not desirable ("per se" rule). Asch, 1983, pp.275-276; Seplaki, 1982, p.435.

[95] The actual controversy in this case was focused on the product market definition and the concluded height of entry barriers. But Commissioner Pertschuk, who disagreed with the FTC's argument, indicates in his concurrent statement awareness of the need to allow this market extension merger. FTC, 1984, pp.1090-1091.

competition. Although new store formats face lower entry barriers, public policy should concentrate on market conduct rather than structural developments in order to ensure fair competition and to keep entry barriers as low as possible.

V. SUMMARY

The recent structure of the grocery retailing industry roots back into the time when technological progress and economic growth fostered the development of chainstores and supermarkets. Today smaller grocery stores and supermarkets perform different functions, so that the relevant product market for supermarkets should include only supermarket sales. The appropriate geographic market is the SMSA.

The most important basic conditions that determine the industry's structure are public policy, technology, population and income growth. Store loyalty and the importance of location for consumers store choice are issues that also influence the industry's conduct.

The market structure is characterized by a high degree of enterprise differentiation, which provides firms some monopoly power. Seller concentration has been increasing and was generally quite high in local urban markets, with a SCR-4 of 71 percent in 1977. Grocery chains increasingly dominate the grocery retail sector and often operate in several markets in one or more given regions. They are therefore conglomerate in nature which allows them to cross-subsidize in order to deter entry. Vertical integration, especially in warehousing, is common for medium to large sized grocery chains as it offers economies of scope. When barriers to entry cannot be overruled, oligopolistic behavior is possible. Entry conditions for supermarkets can be characterized as mixed. Chain stores enjoy

several cost advantages in local advertising, capital raising, site availability and vertical integration, such that in some cases multistore entry may be required.

Supermarket pricing patterns vary considerably, since operating costs can be dispersed among thousands of items. Pricing, promotion and advertising strategies complement each other in order to differentiate a store. The dynamics of pricing and advertising reveal interactions between competitors' strategies, so that mutual interdependence and recognition, which characterize oligopolistic markets, can be assumed for most local markets.

Evaluations of market performance with regard to prices and profits support the assumption of oligopolistic behavior. With increasing concentration, prices are significantly higher. Profits do not always go up proportionally, perhaps because of higher expenses for store differentiation and x-inefficiency. As unionization appears to have a negative impact on firm profits, especially in more concentrated grocery markets, monopoly rents are in part redistributed towards labor.

Public policy is not able to prevent increasing concentration and is reluctant to fight conglomerateness. More emphasis could be placed on controlling market conduct. Competition will be most effective when entry is easy and markets include innovative store formats which emphasize low prices.

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THE ORGANIZATION AND PERFORMANCE OF THE U.S. GROCERY RETAIL TRADE

by

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Diplom, Justus-Liebig-University Giessen, 1986

AN ABSTRACT OF A REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

DEPARTMENT OF ECONOMICS

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1988

Abstract

Demand for food is very inelastic and store location is an important determinant of consumer's store choice, so that increasing concentration in grocery retail markets bears a particular risk of oligopolistic pricing. The purpose of this study was to survey and evaluate the literature on structure, conduct, and performance in the U.S. grocery retailing industry. The major findings can be summarized as follows.

Supermarket concentration has been increasing and is quite high in the majority of local markets. Stores differentiate themselves. Vertically integrated chainstores enjoy economies of scope and have growing importance in most markets. Barriers to entry cannot be overruled, but are lower for new store formats. The pricing and advertising behavior of supermarkets indicate that mutual dependencies are recognized. Local markets can therefore be considered as oligopolistic in structure and conduct.

Evaluations of market performance support the assumption of oligopolistic behavior. With increasing concentration prices are significantly higher. Profits do not always go up proportionally. A portion of monopoly rents is redistributed towards labor when unionization is high.

Public policy is not able to prevent increasing concentration and is reluctant to fight conglomerateness. However, the food retailing industry can still be characterized as reasonably competitive as long as markets are open to innovative firms.